

1. INTRODUCTION

This expanded site inspection (ESI) report provides a comprehensive assessment of the nature, extent, and potential impact of contamination to human health and the environment by evaluating the results of all investigations at Anomaly Area 3 (AA 3), former Marine Corps Air Station (MCAS), El Toro, California.

This report also presents the data collection procedures and analytical results of the removal site evaluation (RSE) field investigation (Earth Tech 2002a) conducted primarily between October and December 2002. The results of the human health preliminary risk evaluation (PRE) and revised ecological risk assessment (ERA) for AA 3 are also included in this report.

A *Draft Screening Ecological Risk Assessment, Removal Site Evaluation, Anomaly Area 3* (Earth Tech 2003a) was submitted to the Base Realignment and Closure (BRAC) Cleanup Team (BCT) on 13 May 2003 for their review and comments. The report presented the representative species selected for the site and the exposure parameters that were used for the ecological assessment, and screening ecological risk assessment (SERA) risk estimates. A working draft of the baseline ecological risk assessment (BERA) was also presented in the draft report.

The regulatory agency comments on the draft SERA (Earth Tech 2003a) were incorporated and a revised ERA that includes both the SERA and BERA results are presented in this Draft ESI document.

This report was prepared for the United States (U.S.) Department of the Navy (DoN), Southwest Division, Naval Facilities Engineering Command (NFECSW SDIEGO), as authorized by the U.S. Navy, Pacific Division, Naval Facilities Engineering Command (NAVFAC EFD PACIFIC PEARL HARBOR HI) under Contract Task Order (CTO) number 0078 of the Comprehensive Long-Term Environmental Action Navy (CLEAN) II program, contract number N62742-94-D-0048.

1.1 PROJECT DESCRIPTION AND BACKGROUND

Former MCAS El Toro is located in Orange County, California, approximately 8 miles southeast of Santa Ana and 12 miles northeast of Laguna Beach (Figure 1-1). Former MCAS El Toro covers approximately 4,738 acres. Land use around MCAS El Toro includes commercial, light industrial, and residential. MCAS El Toro closed on 2 July 1999, as part of the BRAC Act.

The DoN conducted an *Initial Assessment Study* at MCAS El Toro in 1985 (Brown and Caldwell 1986) and a *Site Inspection Plan of Action* during 1987 and 1988 (James M. Montgomery Engineers, Inc. 1988).

MCAS El Toro was added to the National Priorities List (NPL) of the Superfund Program on 15 February 1990 due to volatile organic compound (VOC) contamination at the former MCAS boundary and in the agricultural wells west of former MCAS El Toro. A Federal Facilities Agreement (FFA) was signed by the Marine Corps and the DoN in October 1990 with the Environmental Protection Agency (EPA) Region IX, California Department of Health Services (DHS) (part of which is currently the Department of Toxic Substances Control [DTSC]), and the California Regional Water Quality Control Board, Santa Ana Region (CRWQCB).

In March 1993, MCAS El Toro was placed on the list of military facilities scheduled for closure under the BRAC Act. The BCT includes representatives from SWDIV, EPA, DTSC, and CRWQCB, and was formed to oversee implementation of the FFA.

Implementation of the FFA at former MCAS El Toro included the following investigations and studies at various sites: an air quality solid waste assessment test (Air SWAT), a Phase I remedial investigation (RI), a Phase II RI, and a feasibility study (FS). The DoN conducts Station-wide groundwater sampling routinely.

1.2 REGULATORY GUIDANCE AND SITE STATUS

Consistent with the intent of the FFA, the DoN consulted with the members of the BCT regarding implementation of assessment and response actions at AA 3.

The assessment and development of response action for AA 3 was intended to be administratively handled as part of Installation Restoration Program (IRP) Site 3. It was anticipated that a removal action would be required and this would facilitate and expedite implementation of the action at AA 3 and will allow quicker transfer of the property. However, based on the investigations conducted at the site and the human health and ecological risk assessment results, the DoN has opted to present the results of all investigations and risk assessments at AA 3 in this draft ESI report and recommend a response action for AA 3 site. Subsequent to regulatory review, comments and concurrence on the recommended response action, this report will be finalized and issued.

In addition, investigation and subsequent recommendation of the response action will be in accordance with the following guidance:

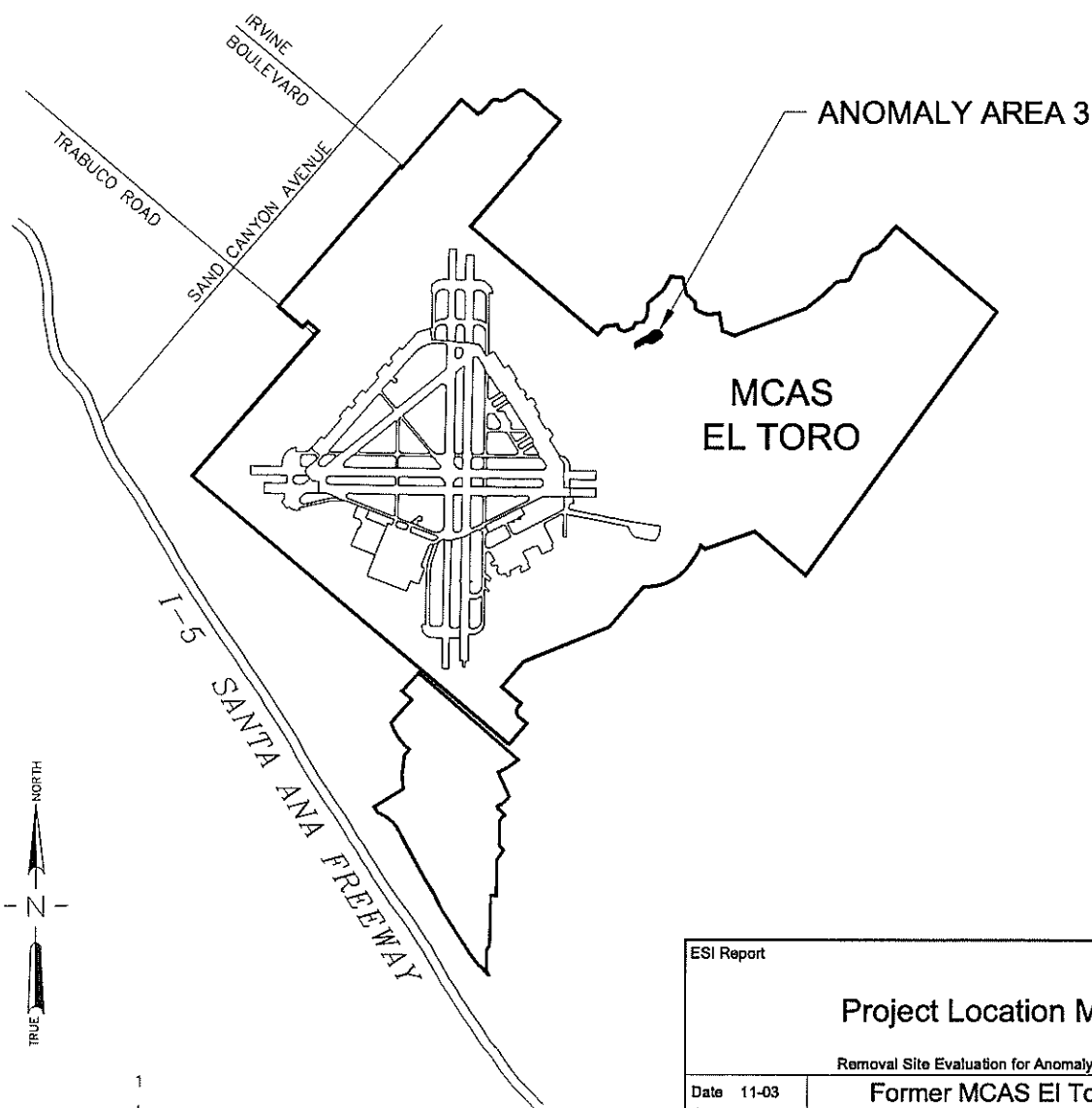
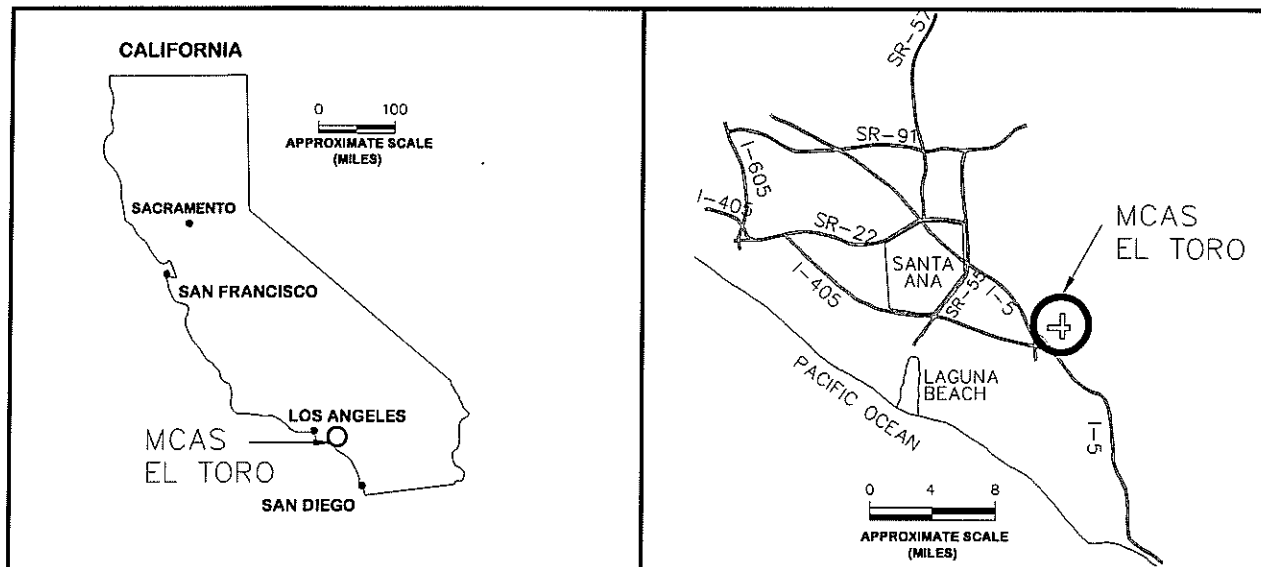
- Final Work Plan Phase II RI/FS, MCAS El Toro (BNI 1995)
- Conducting Remedial Investigations/Feasibility Studies for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Municipal Landfill Sites (EPA 1991a)
- Guidance for Performing Site Inspections Under CERCLA (EPA 1992a)
- Presumptive Remedy for CERCLA Municipal Landfill Sites (EPA 1993a)
- Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills (EPA 1996)


1.3 REPORT ORGANIZATION

This ESI report consists of the main report and twelve appendixes. The sections are organized to present the background information and the results of previous investigations (prior to RSE investigation) in Sections 1.0 through 3.0. The field investigation methods, results, and conclusions of the RSE investigation are presented in Sections 4.0 through 6.0. Section 7.0 presents the human health risk assessment protocol and results. Ecological risk assessment (both SERA and BERA) for the site is presented in Section 8.0 of the report. Section 9.0 presents the conclusions and recommendations for the site. Section 10.0 is a compilation of all references cited in the main text and/or appendixes. Appendixes present specific information in regards to the RSE field investigation, biological habitat assessment, and the human health and ecological risk assessments.

Section 1 – Introduction. This section consists of the project introduction, description and background.

Section 2 – Site Background and Setting. The site background and description are presented in this section.



ESI Report		Draft	
Project Location Map			
Removal Site Evaluation for Anomaly Area 3			
Date	11-03	Former MCAS El Toro	Figure 1-1
Project No.	37380	<div>EARTHTECH</div> <div>A tyco INTERNATIONAL LTD. COMPANY</div>	

Section 3 – Previous Environmental Investigations. The results of all previous investigations at the site are presented in this section. The section includes environmental investigations conducted during 1999 and 2000: geophysical investigation, exploratory trenching, and subsurface soil, perimeter soil gas and groundwater sampling information. Relevant information regarding concurrent groundwater radionuclide evaluation and soil radiological assessments that were performed at few sites at MCAS El Toro (including AA 3) is also presented in this section.

Section 4 – RSE Study Area Investigation. The RSE field investigation boundaries, methodologies protocol, and sampling information are presented in this section. The RSE field investigation sampling design was based on the EPA data quality objectives (DQO) process. The sampling information provided in this section is organized to support the project DQOs.

Section 5 – Physical Characteristics. This section presents the updated geological, hydrogeological and geotechnical information gathered during the RSE field investigation. This section also presents the results of the biological habitat assessments (HAS) that were conducted in October 2002 (winter survey) and June 2003 (early summer/spring survey).

Section 6 – Nature and Extent Contamination. This section presents the analytical results of various media samples (air, soil gas, soil, groundwater, sediment, and surface water) that were collected and analyzed to evaluate the nature and extent of contamination. Results from all investigations are evaluated in this section.

Section 7 – Human Health Risk Assessment. This section presents the methodologies and the results of human health risk assessment performed using the analytical results of surface (0 to 1 foot below ground surface (bgs) and subsurface (greater than 1 foot to 10 feet bgs) soil samples for potential receptors and pathways at the site.

Section 8 – Ecological Risk Assessment. This section presents the methodologies and the results of the ERA performed using the analytical results of soil samples (0 to 6 feet bgs) for ecological representative species and pathways at the site. This ERA is prepared in response to the comments provided by the BCT members on the draft Ecological Risk Assessment report (Earth Tech 2003a). This section incorporates the results of the winter and early summer/spring biological surveys, includes revisions to the ERA based on the BCT comments, and presents the results of both the SERA and the BERA.

Section 9 – Summary, Conclusions, and Recommendations

Section 10 – References

Appendix A – Trench and Excavation Logs

Appendix B – Borehole and Well Construction Logs

Appendix C – Cone Penetrometer Survey Information

Appendix D – Air Sampling Results

Appendix E – Soil Gas Survey (surface and subsurface) Results

Appendix F – Perimeter Soil Gas Survey Results

Appendix G – Surface Soil Sampling Results

Appendix H – Geotechnical Soil Sampling Results

Appendix I – Groundwater Sampling Results

Appendix J – Sediment Sampling Results

Appendix K – Surface Water Sampling Results

Appendix L – Details of Ecological Risk Assessment. This section includes supplementary information that was used to support the SERA and the BERA. The response to BCT comments on the Draft SERA is also presented in this section.